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Case Report

Crusted scabies in a patient with brain astrocytoma: Report of a case

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SUMMARY

A 31-year-old man was referred to our clinic complaining of generalized erythematous and scaly papules and plaques. He suffered from a brain tumor (astrocytoma) and was immunosuppressed because he was receiving systemic steroids and chemo-radiation therapy. He also had psychomotor retardation and behavior changes due to the pressure effect of his brain tumor. The diagnosis of crusted scabies was established based on direct positive skin smears from the lesions.

1. Introduction

Scabies is a major health problem in human communities worldwide. Crusted scabies is most commonly seen in individuals with underlying disease, in patients on immunosuppressive cancer chemotherapy, and in senile bedridden individuals.[1] We present herein a case of crusted scabies in a 31-year-old man suffering from brain astrocytoma.

2. Case report

In August 2007, a 31-year-old man was referred to the outpatient clinic of Razi Hospital, Tehran, Iran, for a dermatologic consultation. His chief complaint was pruritic rashes of 5-month duration, unresponsive to oral antihistamine, topical steroids, and emollients. Family members living with the patient complained of intermittent generalized itchy rashes. Physical examination revealed diffuse scaly erythematous papules on the patient's trunk and upper and lower limbs. There were grayish thick crusted plaques over the bilateral axillary regions, nipples, periumbilical region, dorsum of the hands, and genitalia. There were also erythematous papules on the palms of the hands and soles of the feet and a few scaly lesions on his scalp, but the face was free of lesions. Hyperkeratotic lesions on the dorsal surfaces and palms of the hands together with intact nails are shown in Figure 1.

Microscopic examination of scraped scales demonstrated a large number of scabies mites and eggs, and the diagnosis of crusted scabies was established based on clinical and microscopic findings (Figure 1).

The most notable event in the patient's history was admission to the emergency room due to behavioral changes and confusion in February 2007. Magnetic resonance imaging (MRI) revealed a fairly large frontal brain tumor extending down to the roof of the third ventricle causing bilateral obstructive hydrocephalus in the lateral ventricles. Thereafter, a ventriculo-peritoneal shunt was inserted for the management of hydrocephalus. Brain biopsy revealed grade III anaplastic astrocytoma (a type of glioma). The location of the tumor prohibited any surgical procedures for therapeutic intervention so the patient was treated with chemotherapy concurrent with external beam radiation therapy.

The patient and those members of his family in close contact with him were treated with lindane lotion, which was repeated one week later. Crotamiton cream plus keratolytic agents were used concomitantly by the patient. The patient's skin lesions were markedly improved within two weeks, but he was advised to apply lindane for a third time because of a few remaining crusted lesions. After 10 days, the skin lesions and itching disappeared. There was no relapse of scabies during one-month follow-up; he died as a result of the brain tumor in October 2007.

3. Discussion

Crusted scabies, infestation with Sarcoptes scabies, is characterized by populations of enormous mites in the grossly thickened horny layer of the skin. It is usually associated with an underlying immunodeficiency state. There are a number of predisposing conditions associated with crusted scabies. These include diseases that alter T cell function such as acquired

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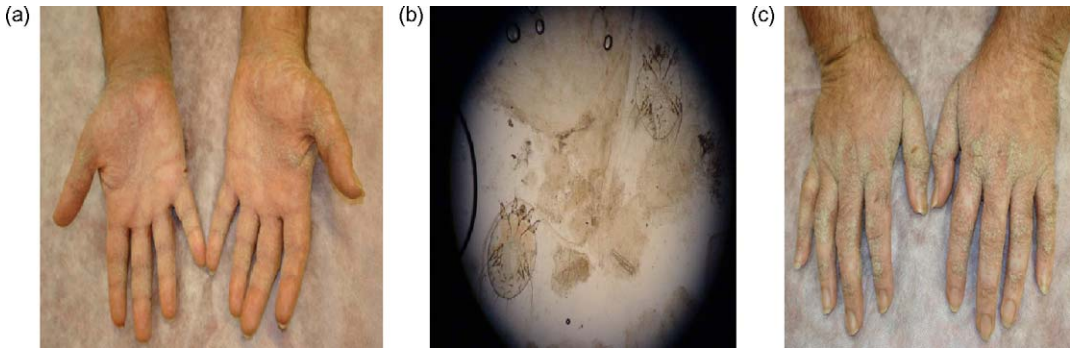

Figure 1. (a) Hyperkeratotic lesions on the palms of hands; (b) scabies mites on microscopic examination of the lesions; (c) hyperkeratotic lesions on the dorsum of hands; note intact nails.

immunodeficiency syndrome (AIDS), human T-lymphotropic virus 1 (HTLV1) infection, T cell lymphoma, and leukemia. It can also be seen in patients on treatment with immunosuppressants and topical corticosteroids.[2]

Our patient had received chemotherapy as well as radiotherapy and was also on systemic corticosteroids to reduce the intracranial pressure for palliation. He had also received two short periods of topical steroids for skin rashes. Such a combination therapy could be a good explanation for the severe infestation with scabies mites.

In mentally retarded patients or those who suffer from dementia or Down's syndrome, crusted scabies is a well-known complication. Lack of pruritus may be important in patients with crusted scabies.[3] Although there were obvious changes in the mental and behavioral status of our patient due to the pressure effect of the brain tumor and hydrocephalus, neurologists could not detect any sensory defects. Hence, in this patient, the presence of crusted scabies without sensory defects may explain an intact itching perception.

Crusted scabies has been reported in malignancies which alter T cell function, such as adult T cell leukemia/lymphoma.[2,4] Recently, T cell dysregulation and immunosuppression due to high-grade glioma has been described.[5] Moreover, Walton et al. have shown the role of cellular and humoral immunity in the pathogenesis of crusted scabies.[6]

In our patient, the immunosuppression due to grade III astrocytoma along with the immunosuppressive effect of combination therapy may explain the development of crusted scabies.

A search of PubMed revealed no similar report of the concomitant occurrence of brain tumor and crusted scabies.

Conflict of interest: No conflict of interest to declare.

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